

A NEW SPECIES OF *HORISMENUS* (HYMENOPTERA: EULOPHIDAE)
PARASITIC ON THE LESSER CORNSTALK BORER,
ELASMOPALPUS LIGNOSELLUS (LEPIDOPTERA: PYRALIDAE)

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Abstract.—A new species of *Horismenus* (*elineatus* Schauff) (Eulophidae: Entedoninae) is described and illustrated. This species is a primary gregarious endoparasitoid of the lesser cornstalk borer, *Elasmopalpus lignosellus* (Zeller), and is native to Bolivia. This species is being studied for possible introduction into the United States for control of the borer.

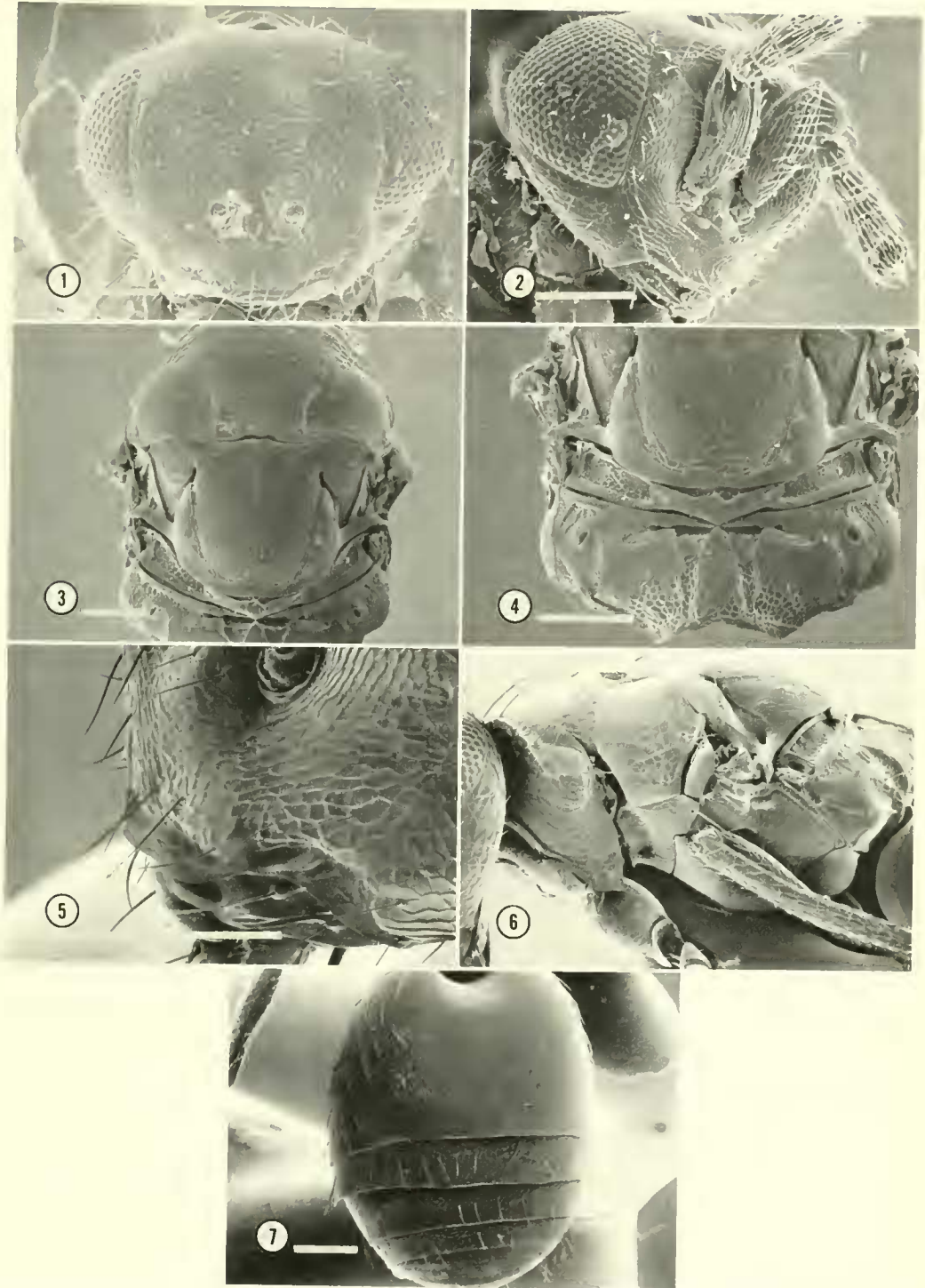
Key Words: biological control, Chalcidoidea, corn

The lesser cornstalk borer, *Elasmopalpus lignosellus* (Zeller), is a pest of corn in the southern United States because it damages the lower part of the cornstalk (Metcalf et al. 1962). During a search for natural enemies in South America, a new species of eulophid was discovered in Bolivia that was attacking the larvae of the borer. This species was submitted to the USDA's Systematic Entomology Laboratory for identification, and the specimens were found to represent an undescribed species in the genus *Horismenus*. I am naming this species so that quarantine, importation, and work on the biology can proceed.

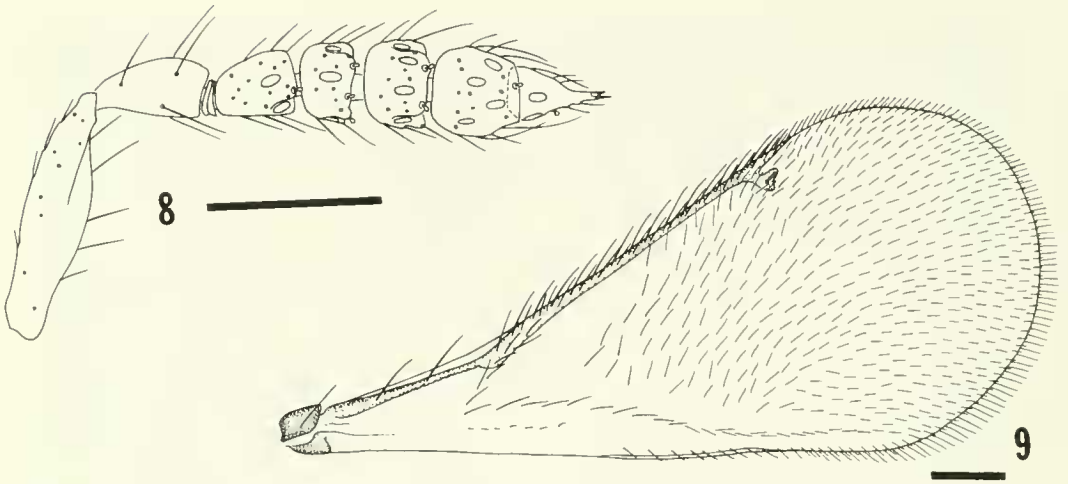
Species of *Horismenus* can be differentiated from other eulophids by the following characters: scutellum with one pair of setae; submarginal vein of forewing with 2 setae (subfamily Entedoninae); median propodeum with a smooth or lightly sculptured raised area bordered by sunken, usually sculptured, areas (Fig. 4); scutellum generally with a nearly complete median longi-

tudinal suture; posterior edge of prepectus interrupted (indented) by anterior margin of mesosternum (Fig. 6); dorsellum V-shaped (pointed) postero-medially; petiole reticulate; second metasomal tergum larger than remaining terga, often covering half the length of the metasoma; stigmal vein (Fig. 9) short, and without a distinct petiole.

The genera most easily confused with *Horismenus* are *Paracrias* and *Edovum*, which also have similar patterns of carinae on the propodeum. But, species of *Paracrias* do not have the posterior edge of the prepectus interrupted and the postero-median dorsellum is not V-shaped, but straight (Schauff 1985). Species of *Edovum* (Grissell 1981) can be distinguished by the presence of an epicnemial carina on the anterior mesosternum and the presence of longitudinal striae on the petiole. In addition, *Paracrias* species are generally parasitic on weevil larvae and the single known species of *Edovum* is parasitic in the eggs of Chryso-



Figs. 1-7. Scanning electron micrographs of *Horismenus elineatus* n. sp. 1. 1, Head of ♀, frontal view. 2, ♂ Head and antennae. 3, ♀ Scutum and scutellum, dorsal view. 4, ♀ Propodeum, dorsal view. 5, ♀ Clypeus and lower face, lateral view. 6, ♀ Mesosoma, lateral view. 7, ♀ Metasoma, dorsal view. Scale line = 0.1 mm.



Figs. 8-9. 8, ♀ antenna. 9, ♀ forewing. Scale line = 0.1 mm.

melidae. *Horismenus* is generally not associated with Coleoptera nor are they egg parasites.

Horismenus elineatus Schauff,
New Species

Female.—Length 1.1–1.4 mm. Color black except the following: apices of all femora, lateral surface of foretibiae, base of mid and hindtibiae, first 3 tarsomeres of all legs, light yellow to white; mid and hindtibiae sometimes dark to light brown, fourth tarsomere sometimes brown.

Head.—Antennae (Fig. 8) with three ring-like anelli; funicular segments wider than long; lower margin of clypeus protruding out over mandibles (Fig. 5); entire face (including intertorular area), frons, and vertex lightly to distinctly alutaceous (Fig. 1).

Mesoscutum alutaceous; notauli distinct posteriorly, fading anteriorly; scutellum alutaceous except smooth at posterior edge, more striate outside of the lateral sutures, sculpture often slightly less strongly expressed than on scutum, but broadening slightly behind the axillae with lateral grooves present only in the expanded area (Fig. 3); median longitudinal groove present only in anterior $\frac{1}{4}$ to $\frac{1}{3}$ and often only discernible as a slight change in the pattern of

sculpture; lateral propodeum (Fig. 4) covered by alutaceous sculpture which is strongest medially and posteriorly.

Metasoma approximately $1.2\times$ as long as wide (excluding petiole), shorter than the mesosoma; petiole 1.2 to $1.0\times$ as long as wide, tergum 2 covering $\frac{1}{2}$ to nearly entire length of metasoma (posterior terga tend to telescope inward in air dried specimens); lightly alutaceous over dorsal and lateral surface, except near basal fovea where the surface is smooth and shining (Fig. 7).

Male.—Length 1.1–1.2 mm. Similar to the female except the following: antenna (Fig. 2) with scape swollen medially, ventral sensory ridge extending nearly its entire length. Metasoma about as long as wide (see below).

There is considerable variation in the appearance and relative length to width of the metasoma in both males and females because of the way in which specimens are preserved and mounted. When air dried, the terminal segments of the metasoma tend to telescope inward. In some males, nearly all the segments past the second may be hidden from view. Otherwise, very little morphological variation was evident in the specimens available for study.

Using the key to North American species

of *Horismenus* (Burks 1971), this species would key to *lixivorus* (Crawford) because it possesses dark tibiae combined with even sculpturing of the scutellum. It is easily separated from that species by the lack of a distinct longitudinal suture on the scutellum (suture present for about 3/4 length of scutellum in *lixivorus*); the sculpturing of the median propodeum (raised median area smooth in *lixivorus*); and the length of the female metasoma (shorter than the head and thorax in *elineatus*, longer than the head and thorax in *lixivorus*). There is no key to South America *Horismenus* species. However, I have examined representative specimens of most of the described species from the Neotropics and they share neither the darkened femora and tibiae nor the almost complete lack of a longitudinal scutellar suture.

Distribution.—Known only from Bolivia.

Discussion.—The placement of this species in *Horismenus* changes, to some degree, the traditional limits of the genus. One of the characters used to define *Horismenus* has been the presence of a more or less complete longitudinal scutellar groove. But, my study of the species of *Horismenus* and of related genera has shown that not only is the length and distinctness of the groove variable in *Horismenus*, but that it also occurs in other genera (e.g. *Alachua* in the New World (Schauff and Boucek 1987) and *Parzaommomyia* from Australia (Boucek 1988)). Hence, the presence of this character can no longer be considered a synapomorphy for species in the genus.

Biology.—This species is a primary gregarious endoparasite of the last three larval instars of *E. lignosellus*. It pupates in the dead body of the host (J. W. Smith, pers. comm.). Whether this species will attack related lepidopterous hosts is being investigated.

Types.—Holotype ♀ on point, antennae and forewing slidemounted; Bolivia, Santa Cruz, CIMCA, 22-IX-1988. G. Pruitt. T88048. Ex. *Elasmopalpus lignosellus* (Pyr-

alidae). Antennae and forewing slide mounted. Deposited in the U.S. National Museum of Natural History. Paratypes: 18 ♀ and 1 ♂ with same data as holotype. 82 ♀ and 5 ♂ with data; Bolivia, 10-VI-1976. E. Colque A. ex. *Elasmopalpus lignosellus*. Paratypes are deposited in the USNM and the following institutions: Texas A & M Univ., College Station; Canadian National Collection, Ottawa; British Museum (Natural History, London).

Etymology.—The species epithet *elineatus* is formed from "e" meaning not or without and "linea" for line and refers to the lack of a distinct longitudinal scutellar line or groove.

ACKNOWLEDGMENTS

I am grateful to J. W. Smith, Jr., M. Rose, and J. B. Woolley for specimens from the Texas A & M University and information on the biology of the parasite. T. J. Henry, E. E. Grissell, S. Heydon, J. B. Woolley and J. LaSalle reviewed the manuscript and provided helpful comments. Linda Lawrence (Systematic Entomology Lab., USDA) drew the female wing and antennae.

LITERATURE CITED

- Boucek, Z. 1988. Australasian Chalcidoidea (Hymenoptera): A biosystematic revision of genera of fourteen families, with a reclassification of species. C.A.B. International, Wallingford, UK. 832 pp.
- Burks, B. D. 1971. The Nearctic species of *Horismenus* Walker (Hymenoptera: Eulophidae). Proc. Entomol. Soc. Wash. 73: 68–83.
- Grissell, E. E. 1981. *Edovum putleri*, n. g., n. sp. (Hymenoptera: Eulophidae) an egg parasite of the Colorado potato beetle (Chrysomelidae). Proc. Entomol. Soc. Wash. 83: 790–796.
- Metcalf, C. L., W. P. Flint, and R. L. Metcalf. 1962. Destructive and Useful Insects. Their habits and Control. McGraw Hill Book Co., New York. 1087 pp.
- Schauff, M. E. 1985. The new world genus *Paracrias* Ashmead (Hymenoptera: Eulophidae). Proc. Entomol. Soc. Wash. 87: 98–109.
- Schauff, M. E. and A. Boucek. 1987. *Alachua floridensis*, a new genus and species of Entedoninae (Hymenoptera: Eulophidae) parasitic on the Florida carpenter ant, *Camponotus abdominalis* (Formicidae). Proc. Entomol. Soc. Wash. 89: 660–664.